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EXAMINER

AUGHENBAUGH, WALTER

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1772

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

July 6, 2004

Application Number: 09/887,836
Filing Date: June 22, 2001
Appellant(s): BRADLEY, JAMES S.

MAILED
JUL 09 2004
GROUP 1700

Lionel D. Anderson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed May 3, 2004.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

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(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

Appellant argues on pages 2-3 of the Appeal Brief that the after-final amendments in claim 11, if entered, would not render the claim indefinite as stated in paragraph 1 of the Advisory Action mailed February 4, 2004 (Adv. Action). In support of this argument, Appellant states that "the claim as amended recites the relationship between the adhesive resin and the antioxidant as being the same as it was in the original claim" on page 2 of the Appeal Brief; this is not true. As amended after-final, claim 11 recites a single step of "applying [the adhesive resin as claimed]", and then midway through the claim, the claim reverts back to an article claim. No connection is established in the claim as amended after-final between the single step of "applying [the adhesive resin as claimed]" and the claimed antioxidant: the film formed by the claimed single step and the antioxidant can be distinct entities within the scope delineated by the claim as amended after-final (e.g. the film can be located in one corner of a room and the antioxidant can be located in another corner of a room). Note that this also introduces a new issue (thus another reason why the amendment after-final should not be entered) since the original claim required

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that the film comprise both the adhesive resin and the antioxidant. Also note that deletion of the word "applied" in the last line of the claim as in the amendment after-final also renders the "from 0.00005... substrate" recitation incomprehensible within the language of the second half of the claim. Given the discussion provided above, the Office maintains all the points made in paragraph 1 of the Adv. Action. Despite Appellant's arguments to the contrary, the after-final amendments in claim 11 do indeed "substantially alter the claim from its original form" for the reasons discussed above.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

The rejection of claims 1-5 and 11 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

Per the request of Appellant as documented in the Interview Summary dated June 30, 2004, claim 12 has been cancelled since a case being sent to the Board cannot include any withdrawn claims.

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct, although claim 12 has been cancelled per Appellant's request as discussed in the previous section (i.e. section (7)).

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(9) Prior Art of Record

U.S. 5,562,874	Saad et al.	10-1996
U.S. 6,194,061	Satoh et al.	02-2001
U.S. 4,650,847	Omura et al.	03-1987

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saad et al. in view of Satoh et al.

In regard to claims 1-3, Saad et al. teaches a packaging laminate comprising an outer layer made of high density polyethylene that is impermeable to a butylated phenolic antioxidant (col. 2, lines 20-23 and 55-60 and col. 3, lines 1-8) and an adhesive layer between the outer layer and an inner layer (the “control layer” as taught by Saad et al.) and in contact with both the outer and inner layers to form the packaging laminate (ethylene vinyl acetate copolymer is an adhesive resin as evidenced by *Hawley’s Condensed Chemical Dictionary*) (col. 2, lines 39-47 and col. 3, lines 13-18). Saad et al. teach that the adhesive layer comprises an adhesive resin (ethylene vinyl acetate copolymer) and the butylated phenolic antioxidant (col. 3, lines 1-18). Saad et al. teach that the inner (“control”) layer allows migration of the butylated phenolic antioxidant therethrough (col. 3, lines 34-48).

Saad et al. fail to explicitly teach that the adhesive layer comprises a curing agent, or in regard to claim 3, that the adhesive resin is selected from the group consisting of polyether urethanes, polyester urethanes and polyurethane.

Satoh et al., however, teach a laminate film comprising an improved adhesion layer formed from a resin composition comprising a polyester graft copolymer and a polyurethane resin (col. 2, lines 18-29), where the film has superior adhesion between a substrate and the improved adhesion layer (col. 2, lines 9-12). Satoh et al. further teach the inclusion of a curing agent (i.e. crosslinking agent) in the resin composition to improve the adhesive property, water resistance and solvent resistance of the adhesive composition (col. 15, lines 58-62 and col. 17, lines 11-20) and the inclusion of an antioxidant (col. 4, line 15). Since the film of Satoh et al. has superior adhesion between a substrate and the improved adhesion layer as taught by Satoh et al., one of ordinary skill in the art would have recognized to have replaced the adhesive layer of Saad et al. with the improved adhesion resin composition comprising polyester, polyurethane and a curing agent (i.e. the polyester urethane of Satoh et al.) as the adhesive layer of Saad et al. in order to effect superior adhesive bonding between the outer and inner ("control") layers of Saad et al. as taught by Satoh et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have replaced the adhesive layer of Saad et al. with the improved adhesion resin composition comprising polyester, polyurethane and a curing agent (i.e. the polyester urethane of Satoh et al.) as the adhesive layer of Saad et al. in order to effect superior adhesive bonding between the outer and inner ("control") layers of Saad et al. as taught by Satoh et al.

In regard to claim 4, Saad et al. fail to teach a curing agent that is selected from the group consisting of polyamines, polyols, isocyanates and organometallics. Satoh et al., however, teach the use of a crosslinking agent such as an amino resin, an amino resin with alcohol, which is a polyol, multifunctional isocyanate compounds or block isocyanate compounds (col. 16, lines 1-

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10). One of ordinary skill in the art recognizes that a crosslinking agent is a curing agent: curing agents crosslink polymer chains. Therefore, one of ordinary skill in the art would have recognized to use the adhesive composition of Satoh et al. that is cured by an amino resin, an amino resin with alcohol, multifunctional isocyanate compounds or block isocyanate compounds as the adhesive layer of Saad et al. in order to effect superior adhesive bonding between the outer and inner ("control") layers of Saad et al. as taught by Satoh et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have use the adhesive composition of Satoh et al. that is cured by an amino resin, an amino resin with alcohol, multifunctional isocyanate compounds or block isocyanate compounds as the adhesive layer of Saad et al. in order to effect superior adhesive bonding between the outer and inner ("control") layers of Saad et al. as taught by Satoh et al.

In regard to claim 5, Saad et al. teach that the butylated phenolic antioxidant is butylated hydroxytoluene or butylated hydroxyanisole (col. 3, lines 4-8).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Omura et al. in view of Satoh et al.

Omura et al. teach an adhesive composition for forming an adhesive film (col. 5, lines 50-56). The composition comprises a resin that consists of one of the polymerizable monomers disclosed in col. 6, lines 7-42. The composition also comprises a curing agent (col. 6, lines 42); therefore, the resin is cured. Omura et al. teach the inclusion of the antioxidant 2,6-di-tert-butyl-p-cresol (butylated hydroxytoluene or BHT) in the amount of up to a maximum of 10 parts per 100 parts by weight of the polymerizable monomers (col. 31, line 22), corresponding to a

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maximum of 100,000 parts per million; the claimed range of Omura et al. consequently overlaps with the claimed range of the instant application.

Omura et al. fail to teach that the cured adhesive resin is solventless, or that the cured adhesive resin is selected from the group consisting of polyether urethanes, polyester urethanes and polyurethane, or that the cured adhesive resin is applied from 0.00005 to 0.001 dry pounds per square foot of a substrate.

Satoh et al., however, disclose a laminate film comprising an improved adhesion layer formed from a resin composition comprising a polyester graft copolymer and a polyurethane resin (col. 2, lines 18-29), where the film has superior adhesion between a substrate and the improved adhesion layer (col. 2, lines 9-12). Satoh et al. further teach the inclusion of a curing agent (i.e. crosslinking agent) in the resin composition to improve the adhesive property, water resistance and solvent resistance of the adhesive composition (col. 15, lines 58-62 and col. 17, lines 11-20) and the inclusion of an antioxidant (col. 4, line 15). Satoh et al. disclose that the polyester graft copolymer is used in the form of a dispersion in an aqueous solvent, namely water (col. 7, lines 40-47). Satoh et al. disclose that the graft polymerization is carried out in an organic solvent that is subsequently evaporated, and water is added to the polymer to form the dispersion (col. 7, lines 47-52). Satoh et al. disclose that the dispersion is then coated onto a thermoplastic substrate film and is then dried (col. 8, lines 5-9). Satoh et al. disclose that the drying of the film results in dehydration; therefore, the water is removed from the adhesive layer (col. 8, lines 7-9), and the adhesive film of Satoh et al. is therefore solventless (i.e. free of any organic solvents, including water, see col. 9, lines 15-20). The method of forming the adhesive resin is not germane to the issue of patentability of the adhesive resin itself; the composition of solely the

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final product is afforded patentable weight. Therefore, one of ordinary skill in the art would have recognized to have replaced the adhesive of Omura et al. with the polyester graft copolymer and polyurethane resin of Satoh et al. (the solventless cured polyester urethane adhesive film taught by Satoh et al.) since Satoh et al. teach that the solventless cured polyester urethane adhesive film of Satoh et al. affords superior adhesive bonding between a substrate and the solventless cured polyester urethane adhesive film as taught by Satoh et al.

In regard to the claimed adhesive application amount of from 0.00005 to 0.001 dry pounds per square foot of a substrate, Satoh et al. disclose that the adhesive is applied to a substrate in an amount of 0.08 dry g/m² (col. 21, lines 23-31). The amount of 0.08 g/m² is equivalent to 0.00002 pounds per square foot. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have varied the adhesive application amount via routine experimentation in order to determine the optimal adhesive application amount necessary to achieve the desired degree of adhesion between the substrate and the improved adhesion layer of Satoh et al. depending on the particular desired end result, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

(11) Response to Argument

Appellant's arguments regarding the 35 U.S.C. 103(a) rejection of claims 1-5 over Saad et al. in view of Satoh et al. presented on pages 4-6 of the Appeal Brief have been fully considered but are not persuasive. Appellant argues that one of ordinary skill in the art would not have been motivated to combine the teachings of Saad et al. and Satoh et al. because the "graft

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polymerization mixture according to Satoh et al. is simply incompatible with the coextrusion process detailed by Saad et al.” since the graft polymerization mixture of Satoh et al. is applied to a film substrate and dried, and cannot be coextruded along with the molten polymeric material that would become the film substrate to form the multilayer laminate of Satoh et al. (see second and third paragraphs of page 5 of the Brief and the paragraph bridging pages 5 and 6 of the Brief; Examiner wishes to make it clear on the record that the rejection proposes replacing the adhesive of Saad et al. with the adhesive of Satoh et al., not “modify[ing] the composition of Saad et al. with the polyester urethane of Satoh et al.” as a portion of the third paragraph of page 5 of the Brief reads). Appellant’s argument consequently depends on the method of forming the laminate of Saad et al. that is taught by Saad et al.; however, the method of forming a laminate is not germane to the issue of patentability of the laminate itself. Saad et al. teach a laminate, and laminates are made by other processes besides coextrusion such as the coating process taught by Satoh et al. and cited by Appellant in the Brief (see col. 26, line 66-col. 27, line 7 of Satoh et al.). One of ordinary skill in the art would have recognized to have used the coating process of Satoh et al. to form the laminate structure taught by Saad et al. because it is well known to one of ordinary skill in the art that the coating process of Satoh et al. is a suitable process for forming laminates as taught by Satoh et al. Contrary to Appellant’s argument that one of ordinary skill in the art would not have been motivated to combine Saad et al. and Satoh et al., one of ordinary skill in the art would have been motivated to have replaced the adhesive of Saad et al. with the adhesive of Satoh et al. for the reason provided in paragraph 14 of Paper 9, i.e. in order to effect superior adhesive bonding between the outer and inner (“control”) layers of Saad et al. as taught by Satoh et al.

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Appellant argues on page 6 of the Brief that “attempted blown film coextrusion” with the adhesive coating of Satoh et al. “would yield only failure”, but laminates are made by other processes besides coextrusion such as the coating process taught by Satoh et al. and cited by Appellant in the Brief (see col. 26, line 66-col. 27, line 7 of Satoh et al.). One of ordinary skill in the art would have recognized to have used the coating process of Satoh et al. to form the laminate structure taught by Saad et al. because it is well known to one of ordinary skill in the art that the coating process of Satoh et al. is a suitable process for forming laminates as taught by Satoh et al.

Appellant argues that the “notion of passive drying at room temperature or with moderate heating as detailed in Paper No. 11 as being an option is simply incompatible with multi-layer film formation according to Saad et al.”, but Paper 11 does not detail “passive drying at room temperature” as an option as Applicant states; on page 5 of Paper 11 it is stated: Satoh et al. actually teaches that “the temperature is set to 80°C-250°C” (col. 17, lines 49-51) and that “longer drying hours can bring about sufficient self-crosslinking property even at a relatively lower temperature” (col. 17, lines 52-54). 80°C, the lower limit of the temperature range taught by Satoh et al., is nowhere near room temperature. Furthermore, the “formation” of the multilayer film of Saad et al. taught by Saad et al. is not the only process by which the multilayer structure taught by Saad et al. can be formed; as stated above, one of ordinary skill in the art would have recognized to have used the coating process of Satoh et al. to form the laminate structure taught by Saad et al. because it is well known to one of ordinary skill in the art that the coating process of Satoh et al. is a suitable process for forming laminates as taught by Satoh et al.

In response to Appellant's citation of *In re Vaeck*, the "suggestion for the combined reference combination" (page 4 of the Brief, i.e. the motivation to combine) has been discussed above, and the reasonable expectation for success in making the combination of references as proposed in paragraph 14 of Paper 9 is based upon the teaching of Satoh et al., as stated in paragraph 14 of Paper 9, that "the inclusion of a curing agent (i.e. crosslinking agent) in the resin composition [improves] the adhesive property, water resistance and solvent resistance of the adhesive composition (col. 15, lines 58-62 and col. 17, lines 11-20)" where the resin composition is used to form an improved adhesion layer of a film that has superior adhesion between a substrate and the improved adhesion layer (col. 2, lines 9-12).

Contrary to Appellant's argument on pages 4-5 of the Brief, one of ordinary skill in the art would have had a reasonable expectation of success in combining Saad et al. and Satoh et al. to form the article as claimed by Applicant since Satoh et al. teach that it is well known to one of ordinary skill in the art that the coating process of Satoh et al. is a suitable process for forming laminates, and since Satoh et al. teach the inclusion of a curing agent (i.e. crosslinking agent) in the resin composition of an improved adhesion layer to improve the adhesive property, water resistance and solvent resistance of the adhesive composition (col. 15, lines 58-62 and col. 17, lines 11-20) of the improved adhesion layer of a film that has superior adhesion between a substrate and the improved adhesion layer (col. 2, lines 9-12). Appellant has not provided support for the statement made on page 5 of the Brief the position that that one of ordinary skill in the art would have had a reasonable expectation of success in combining Saad et al. and Satoh et al. "represent[s] picking and choosing among the individual elements of the prior art references of record".

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Appellant's arguments regarding the 35 U.S.C. 103(a) rejection of claim 11 over Omura et al. in view of Satoh et al. presented on pages 6-7 of the Appeal Brief have been fully considered but are not persuasive. Appellant argues that Omura et al. and Satoh et al. are "completely lacking in teaching a solventless application of resin". Since claim 11 is a product claim, the application of the adhesive need not be solventless; only the final product must be solventless. The adhesive of the final product of Satoh et al. is solventless for the reasons provided in paragraph 15 of Paper 9.


The after-final amendments in claim 11 should not be entered for the reasons provided in section (4) of this Paper.

Therefore, Examiner respectfully submits that claims 1-5 and 11 should be rejected since the scope of the claims falls within the limitations of the existing art. Thus, after considering all the evidence, it is still the position of Examiner that the rejection is appropriate.

For the above reasons, it is believed that the rejections should be sustained.

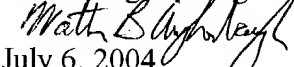
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